

REMARKS

By the foregoing amendments the substitute specification has been amended in the paragraph bridging pages 10 and 11 to correct a minor error and claims 1, 5, 6, 9, 10 and 12-16 have been amended. Thus, claims 1-16 remain in the application.

Claims 5, 6, 9, 10 and 12-16 were rejected in the outstanding Office Action under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Each of claims 5, 9, 12 and 14 recited the limitation "the layer of the polyamide resin" in line 2 of each claim. It was stated in the rejection that there is insufficient antecedent basis for this limitation in the claim. Responsive to this rejection, by the above amendments each of claims 5, 9, 12 and 14 has been amended to change the recitation "the layer of the polyamide resin" to --the layer (II) of a polyamide resin (C)-- for which there is clear antecedent basis in claim 1 from which these claims depend either directly or indirectly.

Each of claims 6, 10, 13, 15 and 16 recite the limitation "the layer of a polyolefin resin". It was stated in the rejection that there is insufficient antecedent basis for this limitation in the claim. Responsive to the rejection, in each of claims 6, 10, 13, 15 and 16 the limitation "the innermost layer is the layer of a polyolefin resin" has been changed to --further comprising as an innermost layer a layer of a polyolefin resin--. There is support in the specification for the positive recitation of this other layer as described in claims 6, 10, 13, 15 and 16. See the references to the other layer of resin on page 15, line 11 to page 17, line 15 of the substitute specification, for example. In view of these changes in the claims, it is respectfully submitted

that the claims are proper under 35 U.S.C. §112, second paragraph.

Accordingly, reconsideration and withdrawal of the rejection is requested.

Claims 1, 2, 4-6 and 11-16 are rejected in the Office Action under 35 U.S.C. §103(a) as being unpatentable over Ninomiya, et al., U.S. 6,184,288 in view of Saxton, U.S. 5,032,632. The references are combined for the reasons and in the manner stated on pages 2 and 3 of the Office Action.

Claims 3 and 7-10 are rejected in the Office Action under 35 U.S.C. §103(a) as being unpatentable over Ninomiya, et al. U.S. 6,184,288 in view of Saxton, U.S. 5,032,632 as applied to claims 1, 2, 4-6 and 11-16, and further in view of Tachibana, et al. U.S. 6,169,161 as stated on page 4 of the Office Action.

These rejections are hereby traversed and reconsideration thereof is respectfully requested in view of the above amendments to the claims and Applicant's remarks set forth below.

The present invention as recited in the claims as amended is directed to an improved laminated article which includes a layer (I) comprising EVOH (A) and a polyamide resin (B) and a layer (II) comprising a polyamide resin (C). In the layer (I), the polyamide resin (B) is contained in the layer (I) in an amount of 10 - 40 parts by weight based on 100 parts by weight of the ethylene-vinyl-acetate copolymer (A) in layer (I). Support for this weight ratio of polyamide resin (B) and the EVOH (A) in layer (I) is found on page 14, lines 4-13 of the substitute specification. The thickness of layer (I) is 3 - 500 μm , and the thickness of layer (II) is 3 - 5000 μm as described on page 18, line 13 to page 19, line 3 of the substitute specification.

In the present invention, as explained in the application specification, the layer (I) is created by the melt-extrusion of EVOH and polyamide resin. At this time, a part of EVOH is decomposed (namely, the main chain structure is cut), and reacts with polyamide resin. Under the proper control regulation of this reaction, the layer (I) which has superior property (delamination resistance, gas barrier property), superior adhesion property to the layer (II), and eventually, the superior laminated article is obtained in all-around view.

However, the control of said melt-extrusion of EVOH and polyamide resin is difficult, and without this control, there is a failure to obtain the layer or laminated article of the invention.

And so in the present invention, the present inventors found that a laminated article comprising a layer (I) containing an EVOH (A) and a polyamide resin (B) and a layer (II) of polyamide resin (C) which is adjacent to the layer (I) directly or via an adhesive resin layer, wherein the EVOH (A) contains a sodium salt (M1) and a bivalent metal salt (M2), and further, in the present invention, containing a phosphorous compound and containing a hindered phenol antioxidant satisfies, and results in the improved laminated article as recited in application claims as amended, which laminated article has a superior property. The cited references do not render obvious the present invention as recited in the claims as amended, 35 U.S.C. §103.

The primary reference to Ninomiya et al, U.S. 6,184,288 discloses hydrous pellets or ethylene-vinyl acetate copolymer hydrolyzate, production thereof and moldings from hydrous pellets. It is stated in the Office Action that the references teaches the EVOH may further contain comonomers of amides, which would inherently become polyamides upon polymerization (col.

3, lines 6-13). But Applicant respectfully submits this description is not the mixture of EVOH and polyamides but the copolymer of them. Therefore, this is irrelevant to the control of reaction of EVOH and polyamide resin at melt-extrusion process which is presupposition of the present invention.

The present invention is a possible solution of the problem which comes at the process of melt-extrusion process of an EVOH and polyamide resin. So, this problem is not present in the case of a copolymer such as described in Ninomiya, et al. Then there is not described in the reference that the layer contains a hindered phenol antioxidant as disclosed and claimed by Applicant.

The secondary reference to Saxton, 5,032,632 is directed to oxidation-resistant ethylene vinyl alcohol polymer compositions. There is described in Saxton to mix a monovalent metal salt and hindered phenolic antioxidant but the reference does not describe using a sodium salt and a divalent metal salt together or contain a phosphorous compound as disclosed and claimed by Applicant. Furthermore, there is not any description in the reference about the mixture of EVOH and polyamide resin which is presupposition of the present invention as noted above and in the claims as amended. So, Applicant respectfully submits it is unpredictable to find the same problem of the present invention and Applicant's solution thereto as recited in the improved laminated article of the invention in the claims as amended.

The patent to Tachibana, et al, U.S. 6,169,161 relied upon in the rejection of claims 3 and 7-10 is for a method for producing polyamides. The reference is concerned with the end-modified polyamide and contains descriptions about the materials which are enabled to blend. But there is no

description in the reference about EVOH as such materials. And there is no description of the specified amount of the compounding agent which is prescribed in the present invention as recited in the claims as amended.

In view of the disparate teachings of the several references and the further definition of the present invention in the application claims as amended, Applicant respectfully submits that the claims as amended are not rendered obvious, 35 U.S.C. §103, by the cited references. Accordingly, reconsideration and allowance of the claims as amended is requested.

Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (Case No. 512.46311X00) and please credit any excess fees to such deposit account.

Respectfully submitted,

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Attachments